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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,243	12/22/2003	Harald van Kampen	Kampen 2-15	6964

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MENDELSOHN & ASSOCIATES, P.C.
1500 JOHN F. KENNEDY BLVD., SUITE 405
PHILADELPHIA, PA 19102

EXAMINER	
HANNIF ALI, LARRY	

ART UNIT	PAPER NUMBER
2688	

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/743,243	KAMPEN ET AL.	
	Examiner	Art Unit	
	Larry Hannif-Ali	2688	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,16-23 and 26-29* is/are rejected.

7)☐ Claim(s) *14-15, 24-25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12-22-03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over van Bokhorst (U.S. Patent No. 6192230 B1) in view of Benveniste (U.S. Pub. No. 2005/0047357 A1).

Regarding **Claim 1**. van Bokhorst teaches at a station of a contention-based WLAN system in which the station is adapted to operate in awake and doze states, a method comprising: (A) with the station in the awake state and an access point (AP) of the system informed that the station is in the awake state, transmitting to the AP a closing frame, informing the AP that the station will transition to the doze state [Col 6, lines 17-19 & Col 6, lines 43-48 & Col 6, lines 51-67 (inherently, the explicit message will be a frame to inform the access point of transition to doze state)] and (B) transitioning the station from the awake state to the doze state [Col 6, lines 63-67]. However, van Bokhorst fails to specifically teach a designated bit in the closing frame informing the access point of transition to doze state. The examiner maintains that the claimed limitation was well known in the art as taught by Benveniste.

In the same field of endeavor, Benveniste discloses a power saving mechanism for 802.11 clients wherein a designated bit in the closing frame informs the access point of transition to doze state [paragraph 0025].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, within the method of van Bokhorst, the designated

bit as taught by Benveniste in order to have a specific bit to indicate transition to doze state.

Regarding **Claim 2**. The combination of van Bokhorst and Benveniste further teaches wherein the contention-based WLAN system conforms to an IEEE 802.11 standard [Benveniste: paragraph 0036].

Regarding **Claim 3**. The combination of van Bokhorst and Benveniste further teaches wherein the contention-based WLAN system conforms to an extension of an IEEE 802.11 standard [Benveniste: paragraph 0036 (802.11e)].

Regarding **Claim 4**. The combination of van Bokhorst and Benveniste further teaches wherein steps (A) and (B) are performed independent of any beacon schedule for the system [van Bokhorst: Col 6, lines 51-67 (station operates in continuous –active mode before transitioning to power –save mode)]

Regarding **Claim 6**. The combination of van Bokhorst and Benveniste further teaches wherein the designated bit is a power management bit of an IEEE 802.11 standard [Benveniste: paragraph 0025].

Regarding **Claim 7**. The combination of van Bokhorst and Benveniste further teaches starting a timer; and transmitting the closing frame either after receiving a data frame from the AP or after the timer reaches a threshold value [van Bokhorst: Col 6, lines 63-67].

Regarding **Claim 8**. The combination of van Bokhorst and Benveniste further teaches further comprising receiving the data frame from the AP, wherein the closing frame is an acknowledgement frame corresponding to said data frame [van Bokhorst: Col 6, lines 48-51 & lines 63-67 (inherently, the message or frame sent from the station is an acknowledgement to the last data frame sent by access point)].

Regarding **Claim 9**. The combination of van Bokhorst and Benveniste further teaches, wherein the timer reaches the threshold value and the closing frame is a null frame [Benveniste: paragraph 0055 (inherently, the null frame informs the access point of transition to doze state and may receive the remaining frames at a later time)].

2. **Claims 10-13, 16-23,** and **26-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over van Bokhorst (U.S. Patent No. 6192230 B1) in view of Benveniste (U.S. Pub. No. 2005/0047357 A1) and further in view of Meier (U.S. Pub. No. 2005/0018624 A1).

Regarding **Claim 10**. The combination of van Bokhorst and Benveniste teaches everything as applied above in Claim 1. However, the combination fails to specifically teach wherein the designated bit is a more data bit of an IEEE 802.11 standard. The examiner maintains that the claimed limitation was well known in the art as taught by Meier.

In the same field of endeavor, Meier discloses a power save method for 802.11E stations wherein the designated bit is a more data bit of an IEEE 802.11 standard [Meier: paragraph 0091].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, with the system of van Bokhorst and Benveniste, the more data bit as taught by Meier, in order to have a specific bit to transition to the doze state.

Regarding **Claim 11**. The combination of van Bokhorst, Benveniste, and Meier further teaches wherein: the closing frame is a data frame [Meier: paragraph 0091 (inherently, the uplink frame can be a data frame with More Data bit set to 0)]; and step (A) comprises receiving from the AP an acknowledgement frame corresponding to the

closing frame [Meier: paragraph 0091 (station receives a downlink frame with the More Data bit set to 0)].

Regarding **Claim 12**. The combination of van Bokhorst and Benveniste teaches everything as applied above in Claim 1. However, the combination fails to specifically teach wherein step (A) comprises receiving a first data frame from the AP, wherein a designated bit in the first data frame informs the station whether the AP has further data to transmit to the station. The examiner maintains that the claimed limitation was well known in the art as taught by Meier.

In the same field of endeavor, Meier discloses a power save method for 802.11E stations wherein step (A) comprises receiving a first data frame from the AP, wherein a designated bit in the first data frame informs the station whether the AP has further data to transmit to the station [paragraph 0059, lines 6-13 & Fig. 3].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, with the system of van Bokhorst and Benveniste, the designated bit to inform the station whether the AP has further data to transmit to the station in order to have a way of determining if there are more frames to be sent to the station.

Regarding **Claim 13.** The combination of van Bokhorst, Benveniste, and Meier further teaches wherein, when the designated bit in the first data frame informs the station that the AP has further data [Meier: paragraph 0059, lines 6-13], the station transmits an acknowledgement frame corresponding to the first data frame, wherein a designated bit in said acknowledgement frame informs the AP that the station will remain in the awake state and be available to receive at least one further transmission from the AP [Benveniste: paragraph 0019, lines 1-3].

Regarding **Claim 16**. The combination of van Bokhorst, Benveniste, and Meier further teaches, further comprising: (C) with the station in the doze state, transitioning the station from the doze state to the awake state; and (D) transmitting to the AP a first

frame, wherein a designated bit in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP [Meier: paragraph 0059, lines 6-15].

Regarding **Claim 17**. van Bokhorst teaches at an access point (AP) of a contention-based WLAN system in which a station is adapted to operate in awake and doze states, a method comprising: (A) with the station in the awake state and the AP informed that the station is in the awake state, receiving from the station a closing frame, informing the AP that the station will transition to the doze state [Col 6, lines 17-19 & Col 6, lines 43-48 & Col 6, lines 51-67 (inherently, the explicit message will be a frame to inform the access point of transition to doze state)]. However, van Bokhorst fails to specifically teach a designated bit in the closing frame informing the access point of transition to doze state. The examiner maintains that the claimed limitation was well known in the art as taught by Benveniste.

In the same field of endeavor, Benveniste discloses a power saving mechanism for 802.11 clients wherein a designated bit in the closing frame informs the access point of transition to doze state [paragraph 0025].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, within the method of van Bokhorst, the designated bit as taught by Benveniste in order to have a specific bit to indicate transition to doze state.

The combination of van Bokhorst and Benveniste teaches everything as applied above. However, the combination fails to specifically teach (B) refraining from transmitting frames to the station until a notification is received that the station is in the awake state. The examiner maintains that the claimed limitation was well known in the art as taught by Meier.

In the same field of endeavor, Meier discloses a power save method for 802.11E stations where the access point (AP) refrains from transmitting frames to the station until a notification is received that the station is in the awake state [paragraph 0022, lines 1-8 (when the station is in the doze state, all downlink frames are buffered)].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, with the system of van Bokhorst and Benveniste, the method of Meier in order to further increase the battery life of the station.

Regarding **Claim 18**. The combination of van Bokhorst, Benveniste, and Meier further teaches wherein the contention-based WLAN system conforms to an extension of an IEEE 802.11 standard [Benveniste: paragraph 0036].

Regarding **Claim 19**. The combination of van Bokhorst, Benveniste, and Meier further teaches wherein the designated bit is a more data bit of the IEEE 802.11 standard [Meier: paragraph 0091].

Regarding **Claim 20**. The combination of van Bokhorst, Benveniste, and Meier further teaches wherein steps (A) and (B) are performed independent of any beacon schedule for the system [van Bokhorst: Col 6, lines 51-67 (station operates in continuous –active mode before transitioning to power –save mode)].

Regarding **Claim 21**. The combination of van Bokhorst, Benveniste, and Meier further teaches wherein the closing frame is a data frame [Meier: paragraph 0091 (inherently, the uplink frame can be a data frame with More Data bit set to 0)]; and step (A) comprises transmitting to the station an acknowledgement frame corresponding to the closing frame [Meier: paragraph 0091 (station receives a downlink frame with the More Data bit set to 0)].

Regarding **Claim 22**. The combination of van Bokhorst, Benveniste, and Meier further teaches wherein step (A) comprises transmitting a first data frame to the station, wherein a designated bit in the first data frame informs the station whether the AP has further data to transmit to the station [Meier: paragraph 0059 & Fig. 3].

Regarding **Claim 23**. The combination of van Bokhorst, Benveniste, and Meier further

teaches wherein, when the designated bit in the first data frame informs the station that the AP has further data [Meier: paragraph 0059, lines 6-13], the station transmits an acknowledgement frame corresponding to the first data frame, wherein a designated bit in said acknowledgement frame informs the AP that the station will remain in the awake state and be available to receive at least one further transmission from the AP [Benveniste: paragraph 0019, lines 1-3].

Regarding **Claim 26.** van Bokhorst teaches a station in a contention-based WLAN system, the station adapted to operate in awake and doze states and comprising: a processor and a transceiver, wherein: (A) with the station in the awake state and an access point (AP) of the system informed that the station is in the awake state, the processor configures the transceiver to transmit to the AP a closing frame, informing the AP that the station will transition to the doze state [Col 7, lines 26-33 & Col 6, lines 17-19 & Col 6, lines 43-48 & Col 6, lines 51-67 (inherently, the explicit message will be a frame to inform the access point of transition to doze state)]; and (B) the processor configures the station to transition from the awake state to the doze state [Col 6, lines 63-67]. However, van Bokhorst fails to specifically teach a designated bit in the closing frame informing the access point of transition to doze state. The examiner maintains that the claimed limitation was well known in the art as taught by Benveniste.

In the same field of endeavor, Benveniste discloses a power saving mechanism for 802.11 clients wherein a designated bit in the closing frame informs the access point of transition to doze state [paragraph 0025].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, within the method of van Bokhorst, the designated bit as taught by Benveniste in order to have a specific bit to indicate transition to doze state.

Regarding **Claim 27**. van Bokhorst teaches a contention-based WLAN system, comprising an access point (AP) and a station, wherein: the station is adapted to operate in awake and doze states; and the station comprises: a processor and a

transceiver, wherein: (A) with the station in the awake state and the AP informed that the station is in the awake state, the processor configures the transceiver to transmit to the AP a closing frame, informing the AP that the station will transition to the doze state [Col 7, lines 26-33 & Col 6, lines 43-48 & Col 6, lines 17-19 & Col 6, lines 51-67 (inherently, the explicit message will be a frame to inform the access point of transition to doze state)]; and (B) the processor configures the station to transition from the awake state to the doze state [Col 6, lines 63-67]. However, van Bokhorst fails to specifically teach a designated bit in the closing frame informing the access point of transition to doze state. The examiner maintains that the claimed limitation was well known in the art as taught by Benveniste.

In the same field of endeavor, Benveniste discloses a power saving mechanism for 802.11 clients wherein a designated bit in the closing frame informs the access point of transition to doze state [paragraph 0025].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, within the method of van Bokhorst, the designated bit as taught by Benveniste in order to have a specific bit to indicate transition to doze state.

Regarding **Claim 28**. van Bokhorst teaches an access point (AP) of a contention-based WLAN system in which a station is adapted to operate in awake and doze states, the AP comprising a processor and a transceiver [Col 4, lines 16-26 & Fig. 3 & Col 6, lines 17-19 & Col 6, lines 43-48 & Col 6, lines 51-67 (inherently, the explicit message will be a frame to inform the access point of transition to doze state)], wherein the processor configures the transceiver: (A) with the station in the awake state and the AP informed that the station is in the awake state, to receive from the station a closing frame, informing the AP that the station will transition to the doze state; and (B) to refrain from transmitting frames to the station until a notification is received that the station is in the awake state. However, van Bokhorst fails to specifically teach a designated bit in the closing frame informing the access point of transition to doze state. The examiner maintains that the claimed limitation was well known in the art as taught by Benveniste.

In the same field of endeavor, Benveniste discloses a power saving mechanism for 802.11 clients wherein a designated bit in the closing frame informs the access point of transition to doze state [paragraph 0025].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, within the method of van Bokhorst, the designated bit as taught by Benveniste in order to have a specific bit to indicate transition to doze state.

The combination of van Bokhorst and Benveniste teaches everything as applied above. However, the combination fails to specifically teach (B) refraining from transmitting frames to the station until a notification is received that the station is in the awake state. The examiner maintains that the claimed limitation was well known in the art as taught by Meier.

In the same field of endeavor, Meier discloses a power save method for 802.11E stations where the access point (AP) refrains from transmitting frames to the station until a notification is received that the station is in the awake state [paragraph 0022, lines 1-8].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, with the system of van Bokhorst and Benveniste, the method of Meier in order to further increase the battery life of the station.

Regarding **Claim 29**. van Bokhorst teaches a contention-based WLAN system, comprising an access point (AP) and a station, wherein: the station is adapted to operate in awake and doze states; and the AP comprises a processor and a transceiver[Col 4, lines 16-26 & Col 6, lines 43-48 & Fig. 3 & Col 6, lines 17-19 & Col 6, lines 51-67 (inherently, the explicit message will be a frame to inform the access point of transition to doze state)], wherein the processor configures the transceiver: (A) with the station in the awake state and the AP informed that the station is in the awake state, to receive from the station a closing frame, informing the AP that the station will transition to the doze state; and (B) to refrain from transmitting frames to the station until a notification is received that the station is in the awake state. However, van Bokhorst fails

to specifically teach a designated bit in the closing frame informing the access point of transition to doze state. The examiner maintains that the claimed limitation was well known in the art as taught by Benveniste.

In the same field of endeavor, Benveniste discloses a power saving mechanism for 802.11 clients wherein a designated bit in the closing frame informs the access point of transition to doze state [paragraph 0025].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, within the method of van Bokhorst, the designated bit as taught by Benveniste in order to have a specific bit to indicate transition to doze state.

The combination of van Bokhorst and Benveniste teaches everything as applied above. However, the combination fails to specifically teach (B) refraining from transmitting frames to the station until a notification is received that the station is in the awake state. The examiner maintains that the claimed limitation was well known in the art as taught by Meier.

In the same field of endeavor, Meier discloses a power save method for 802.11E stations where the access point (AP) refrains from transmitting frames to the station until a notification is received that the station is in the awake state [paragraph 0022, lines 1-8].

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use, with the system of van Bokhorst and Benveniste, the method of Meier in order to further increase the battery life of the station.

Allowable Subject Matter

3. **Claims 14-15**, and **24-25** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **Claim 14**. The prior art of record does not disclose or suggest the method of Claim 13, wherein step (A) comprises receiving a second data frame from the AP, wherein a designated bit in the second data frame informs the station whether the AP has further data to transmit to the station.

Regarding **Claim 15**. The prior art of record does not disclose or suggest the method of Claim 12, wherein, when the designated bit in the first data frame informs the station that the AP has further data, the station transmits the closing frame.

Regarding **Claim 24**. The prior art of record does not disclose or suggest the method of Claim 23, wherein step (A) comprises transmitting a second data frame to the station, wherein a designated bit in the second data frame informs the station whether the AP has further data to transmit to the station.

Regarding **Claim 25**. The prior art of record does not disclose or suggest the method of Claim 22, wherein, when the designated bit in the first data frame informs the station that the AP has further data, the station transmits the closing frame.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Larry Hannif-Ali whose telephone number is 571-272-5598. The examiner can normally be reached on Mon-Fri 9:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Larry Hannif-Ali

November 29, 2005

GEORGE ENG
PRIMARY EXAMINER